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# OCCURRENCE OF *MYSIDOPSIS ALMYRA* BOWMAN, 1964 (MYSIDACEA) IN THE PATAPSCO RIVER ESTUARY (UPPER CHESAPEAKE BAY), MARYLAND, U.S.A.

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*Abstract.*—*Mysidopsis almyra* Bowman has been reported from estuarine waters of eastern Mexico (Price, 1978), northwards around the perimeter of the Gulf of Mexico, south to the Florida Everglades (Stuck *et al.*, 1979), and from the St. Johns' River on Florida's Atlantic coast (Price and Vodopich, 1979). Stuck *et al.* (1979) noted that *M. almyra* was the dominant mysid in oligohaline-mesohaline areas of Gulf of Mexico estuaries. This note documents the occurrence of *M. almyra* from the Patapsco River (39°10′N, 76°28′W), a tributary of the upper Chesapeake Bay and extends the northern range ca. 1300 km. Specimens have been identified by Dr. T. E. Bowman and are deposited in the United States National Museum of Natural History, Washington, D.C.

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*Mysidopsis almyra* was collected during each of the first 4 dates (10 and 25 July, 13 August, and 10 September 1980) of a one year program designed to examine spatial and temporal distribution of macroplankton in the Patapsco River. Collections were made at 3 stations ca. 3 m in depth and one station ca. 1.5 m in depth during both day and night flood and ebb tides. 0.505 mm mesh nets were mounted in a 60-cm bongo frame and towed at near-surface (deeper stations only) and near-bottom depths; the bongo frame was mounted in an epibenthic sled for near-bottom collections. Sample volume averaged 104 $m^3$ (range: 32 to 143 $m^3$). Temperature, dissolved oxygen, salinity and pH were measured with each collection.

Densities of *M. almyra* ranged from 0 to 6900 1000 $m^{-3}$. On 10 September densities averaged 1100 1000 $m^{-3}$ for 55 samples. *Mysidopsis almyra* was the dominant species on this date, making up >49% of the invertebrate macroplankton. The population structure on 10 September was: ♀♀ 57.5% (brooding ♀♀ 19.1%); ♂♂ 23.6%; juveniles 23.4%, The male : female sex ratio was 0.4:1. *Mysidopsis almyra* was rare on the July and August dates. The population structure in the Patapsco River was quite similar to other areas reported in the literature (Price, 1978; Price and Vodopich, 1979; Stuck *et al.*, 1979a) in that sexually mature females were predominant. Sex ratios in other studies were also similar to that found in this study: 0.3:1 and 0.4:1

Table 1.—Mean abundance (no. 1000 $m^{-3}$) of *Mysidopsis almyra* by sample depth, photoperiod, and tide from the Patapsco River, Maryland, 11 July to 10 September 1980.

| | Collection depth | | Photoperiod | | Tide | |
|---|---|---|---|---|---|---|
| | Surface | Bottom | Day | Night | Flood | Ebb |
| Surface | — | — | 2 | 418 | 145 | 263 |
| Bottom | — | — | 57 | 652 | 444 | 261 |
| Day | — | — | — | — | 53 | 13 |
| Night | — | — | — | — | 598 | 511 |
| Mean | 206 | 352 | 33 | 553 | 318 | 262 |

in Price (1978), 0.5:1 (Price and Vodopich, 1979) and a mean male : female ratio of 0.6:1 for 17 sites reported by Stuck *et al.* (1979a).

*Mysidopsis almyra* was more abundant in near-bottom collections and on flood tides (Table 1). The change in vertical stratification by photoperiod (Table 1) indicated that *M. almyra* undergoes nocturnal vertical migrations.

Clutch size of brooding females was measured on 13 August (n = 16) and 10 September (n = 291). Clutch size averaged 13.4 eggs (range: 5–26) and 12.2 larvae (range: 2–24). These clutch sizes are somewhat larger than those reported by Price (1978) for Galveston Bay, Texas ($\bar{x}$ = 5.4; range: 3–10) and Mexico ($\bar{x}$ = 9.0; range: 4–15), and by Price and Vodopich (1979) for the St. Johns' River, Florida ($\bar{x}$ = 4.0; range: 3–6).

Sediments at the deeper stations were generally a very fine silt covered with a thin, yellow-brown flocculent layer. At the most bayward station coarse sand was also found. The littoral station had areas of silt, sand, herbaceous debris, and hydroids. Ranges of physicochemical parameters on 10 September were: temperature 23.7–28.8°C; dissolved oxygen 4.7–16.0 mg $l^{-1}$; salinity 8.7–13.0‰; pH 6.9–9.0. The most abundant macroplankton species, other than *M. almyra,* on the 10 September date were: *Rhithropanopeus harrisii* (Decapoda, Xanthidae) larvae (457 1000 $m^{-3}$), *Lironeca ovalis* (Isopoda, Cymothoidae) juveniles (184 1000 $m^{-3}$), *Argulus alosae* (Branchiura) (148 1000 $m^{-3}$), and *Neomysis americana* (Mysidacea) (126 1000 $m^{-3}$).

Whether *M. almyra* inhabits other Atlantic coast estuaries north of Florida is open to conjecture. The only long-term coastal/estuarine study in which mysids were studied was Williams' (1972) decade-long investigation in North Carolina; *M. almyra* was not found in this study, nor by Hopkins (1965), nor by Wigley and Burns (1971) in their extensive treatment of Atlantic coast mysids.

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